Extension Service
West Virginia University.

Disaster and Emergency Management Resources

Weed Management After a Flood

Floods can affect weeds both the year they occur and in subsequent years. The biggest impact in the flood year will be the reduced competitive ability of the crop. Weeds will take advantage of the stunted or killed crops and grow to maturity.

In the year after a flood, new weed problems will be likely. Some of the weeds carried into the field by floodwaters may not have germinated in time to be noticed during the previous growing season. Mechanical and chemical methods need to be considered in both the flood year and subsequent years to manage weeds. A bioassay test--in which seeds are planted in flooded and non-flooded soil samples--can be helpful to determine if soils are safe for intended crops.

If the Crop Recovers

- If the crop recovers after the flood, make an effort to reduce the impact of weed competition. This may not be practical if fields are too wet to enter for mechanical or chemical weeding.

- Check fields regularly to monitor crop and weed development. Take note of weed species. Are there any new species? There may be weed seeds carried into the field by floodwater. Make a field map of these weed locations and use it to plan next year's weed management program.

- Consider whether herbicides can be safely applied. Most labels clearly specify the maximum growth stage of the crop at which the product can be used. Applications following a midseason flood are very likely to be beyond this "window" of application timing. Most labels also caution against using herbicides if the crop is under any stress. Thus, the feasibility of herbicide use the same year as a flood occurs is limited.

When Crops Are Damaged

- Flooding usually kills the crop or at least injures it so severely that it will not be worth harvesting. If this is the case, try to prevent weeds from going to seed through the use of mowing, tillage, or chemical application.

- As mentioned above, take note of any new weed species that are present. Make a field map of the weeds to plan next year's weed control program.

- Mowing will allow some weeds to survive but may hasten drying of the soil more than using herbicides. Mowing is also an option if the soil is too wet to be tilled.

- Mechanically tilling the soil, if it is dry enough, will destroy weeds. It will also aerate the soil more than either mowing or spraying.

- Applying nonselective, non-residual herbicides may be a good option if the soil is too wet to work mechanically.

- Repeat either mowing, tillage, or chemical application if another generation of weeds emerges that will have time to produce seed.

The Year After the Flood

- Be alert for new weed problems the year after the flood. Some weeds may have germinated after you made an assessment of weeds during the flood year. Others may have remained dormant until this season. The flood may also have deposited soil that is different in texture, pH, and organic matter content. These factors may influence herbicide performance and crop safety. Take soil samples and base herbicide selection and rates on current soil characteristics.

- The "new soil" may have herbicide residues from the previous season's application. These levels are unlikely to affect this year's crop, but it would be wise to do a simple bioassay test to determine if planned crops are feasible in the flood-deposited soil. To carry out a bioassay test:

  - Take several soil samples from the flooded field (1 quart per sample) and plant three or four seeds of the planned crop in each one.

  - Collect soil samples from a known herbicide-free site to use as a standard and likewise plant three or four seeds of the planned crop.

  - Grow the seedlings for two to four weeks.

  - If plants in the flooded soil are normal and appear to grow as well as those in the herbicide-free soil, indications are strong that it is safe to plant your crop.

  - If crop growth in the flooded soil is abnormal, have an agricultural professional determine if the symptoms are related to possible herbicide residues in the soil or to other causes, such as nutrient deficiencies or diseases.

Adapted from resource material developed by the University of Wisconsin Extension Service entitled "The Disaster Handbook for Extension Agents"